

Title (en)
SUPERCONDUCTING COIL, METHOD FOR PRODUCING SAME, AND RECTANGULAR SUPERCONDUCTING WIRE MATERIAL FOR SUPERCONDUCTING COIL

Title (de)
SUPRALEITENDE SPULE, HERSTELLUNGSVERFAHREN UND RECHTECKFÖRMIGES SUPRALEITENDES DRAHTMATERIAL FÜR SUPRALEITENDE SPULE

Title (fr)
BOBINE SUPRACONDUCTRICE, PROCÉDÉ DE PRODUCTION ASSOCIÉ, ET MATÉRIAU DE FIL SUPRACONDUCTEUR RECTANGULAIRE POUR BOBINE SUPRACONDUCTRICE

Publication
EP 4064301 A4 20231129 (EN)

Application
EP 20889392 A 20201118

Priority
• JP 2019208291 A 20191118
• JP 2020043082 W 20201118

Abstract (en)
[origin: EP4064301A1] The superconducting coil includes: a winding frame; and at least two superconducting rectangular wire layers provided in such a manner that a superconducting rectangular wire is spirally wound on an outer peripheral surface of the winding frame in a substantially circumferential direction of the winding frame such that wires adjacent to each other in an axial direction of the winding frame are arranged side by side and separated from each other, the superconducting rectangular wire including an NbTi-based or Nb₃Sn-based wire having a surface coated with copper or copper alloy and having a substantially rectangular cross-section, in which at least a thermoplastic fusible resin is provided in a separated section between the adjacent wires in the same superconducting rectangular wire layer and a separated section between the adjacent wires that are located respectively in the two superconducting rectangular wire layers adjacent to each other, and when viewed in a cross section including an axis of the winding frame, at least one of voids that are partitionable on outer surfaces of a total of three superconducting rectangular wires and are partitionable on outer surfaces of a total of four superconducting rectangular wires located on the two adjacent superconducting rectangular wire layers and adjacent to each other are 4% or less in terms of a void ratio (V1), which is an area ratio of the voids occupying the at least two superconducting rectangular wire layers.

IPC 8 full level
H01F 6/06 (2006.01); **H01B 12/04** (2006.01)

CPC (source: EP KR US)
H01B 12/04 (2013.01 - EP KR); **H01F 6/06** (2013.01 - EP KR US); **H01F 41/048** (2013.01 - US); **Y02E 40/60** (2013.01 - EP KR); **Y10S 505/701** (2013.01 - KR); **Y10S 505/704** (2013.01 - KR); **Y10S 505/739** (2013.01 - KR)

Citation (search report)
• [I] US 5708405 A 19980113 - MORIYAMA HIDESHIGE [JP], et al
• [A] JP H0684661 A 19940325 - TOSHIBA CORP
• [A] JP H09148124 A 19970606 - KOBE STEEL LTD, et al
• See also references of WO 2021100789A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 4064301 A1 20220928; EP 4064301 A4 20231129; CN 114746964 A 20220712; JP WO2021100789 A1 20210527; KR 20220098750 A 20220712; US 2022406504 A1 20221222; WO 2021100789 A1 20210527

DOCDB simple family (application)
EP 20889392 A 20201118; CN 202080079788 A 20201118; JP 2020043082 W 20201118; JP 2021558433 A 20201118; KR 20227018292 A 20201118; US 202017777563 A 20201118